

REMARKS/ARGUMENTS

Claims 23-26, 28-30, and 32-39 are pending in this application. By this Amendment, Applicant AMENDS claims 23 and 34, and CANCELS claims 27, 31, and 40-44.

Applicant affirms election of Group I, including claims 23-39. Claims 40-44 have been canceled since these claims are directed to a non-elected invention. Applicant reserves the right to file a Divisional Application to pursue Group II, including claims 40-44.

Claims 23-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shigeyama (JP 2004-063504).

As indicated above, Applicant has canceled claims 27 and 31.

Applicant respectfully traverses the rejections of claims 23-26, 28-30, and 32-39.

Claim 23 has been amended to recite:

A method for fabricating a semiconductor device, the method including:
forming an amorphous silicon film on a substrate;
preprocessing the amorphous silicon film by modifying the amorphous silicon film to prepare the amorphous silicon film to be made polycrystalline;
laser processing the amorphous silicon film modified through the preprocessing step for producing a polycrystalline silicon film; and
laser power inspecting/extracting for inspecting for the presence of a foreign object or an abnormality in the preprocessing step by use of the amorphous silicon film having undergone the preprocessing step, and for determining a laser power based on a predetermined inspection performed on a predetermined region; wherein
the laser processing step uses the laser power determined in the laser power inspection/extraction step. (emphasis added)

With the unique combination and arrangement of features recited in Applicant's claim 23, including the feature of "laser power inspecting/extracting for inspecting for the presence of a foreign object or an abnormality in the preprocessing step by use of the amorphous silicon film having undergone the preprocessing step, and for determining a laser power based on a predetermined inspection performed on a predetermined region," Applicant has been able to provide a method for fabricating a semiconductor device that permits a polycrystalline silicon film to be produced with enhanced performance and quality as a result of further optimizing the laser power at which a laser processing step is performed for modifying amorphous silicon

film into polycrystalline silicon film (see, for example, paragraph [0015] of Applicant's specification).

The Examiner alleged that "[Shigeyama] teaches a chemical vapor deposition process for producing semiconductor devices for forming amorphous film on a substrate, and irradiating the film multiple times to control the crystalline thickness and distribution of the film using a laser. The power of the laser can be altered and controlled to change the crystalline film's morphology. [Shigeyama] using a control system while the amorphous film and production of a crystal film is completed by an annealing treatment, based on a degree of crystallinity obtained."

Applicant has amended claim 23 to recite the feature of "laser power inspecting/extracting for inspecting for the presence of a foreign object or an abnormality in the preprocessing step by use of the amorphous silicon film having undergone the preprocessing step, and for determining a laser power based on a predetermined inspection performed on a predetermined region." Support for this feature is found, for example, in paragraph [0102], [0114]-[0118], and [0123]-[0137] of Applicant's specification and Applicant's previously presented claim 27.

Shigeyama does not teach or suggest this method step.

Shigeyama teaches an amorphous silicon layer 6 being coated with an oxidizing liquid to form an oxide film 7, as shown in Fig. 4(b) and discussed in paragraph [0027] of the English machine translation of Shigeyama. After forming this oxide film 7, catalyst sedimentary layers 8 are formed on the top of the oxide film 7, the amorphous silicon layer 6 is heated, and laser annealing equipment 3 is used to irradiate the amorphous silicon layer 6.

Shigeyama also teaches inspecting a crystal film 2 with testing equipment 1, as shown in Fig. 2 of Shigeyama. During this inspecting, the crystallinity of the crystal film 2 is determined based on white concentration values 26 and black concentration values 27, as shown in Figs. 11 and 12 and discussed in paragraph [0035] of the English machine translation of Shigeyama. After determining the degree of crystallinity, the level of laser energy that is used to irradiate the amorphous silicon layer 6 is adjusted, as shown in Fig. 6 of Shigeyama.

Thus, Shigeyama simply teaches a device that is arranged to check the crystallinity of a crystalline film by using an image of the crystal film. Shigeyama does not teach or suggest anything at all about inspecting the crystal film for any abnormalities or foreign objects in a preprocessing step. Accordingly, Shigeyama clearly fails to teach or suggest the feature of "laser power inspecting/extracting for inspecting for the presence of a foreign object or an abnormality in the preprocessing step by use of the amorphous silicon film having undergone the preprocessing step, and for determining a laser power based on a predetermined inspection performed on a predetermined region" as recited in Applicant's claim 1.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Shigeyama.

In view of the foregoing amendments and remarks, Applicant respectfully submits that claim 23 is allowable. Claims 24-26, 28-30, and 32-39 depend upon claim 23, and are therefore allowable for at least the reasons that claim 23 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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